

Serial No. 09/853,044
Amdt. dated November 6, 2006
Reply to Office Action of October 11, 2006

Docket No. CIT/K-0146

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus for displaying a three-dimensional image, ~~which synthesizes the apparatus synthesizing an~~ aspectogram comprising at least three two-dimensional microimages of a scene and ~~regenerates regenerating~~ them in a three-dimensional image of the scene, the apparatus comprising:

a detector for tracing movement of an observer head that observes the three-dimensional image, in real time and detecting a position of the observer head; and

a compensator, ~~the compensator capable of for~~ adjusting a viewing zone of the three-dimensional image that is synthesized from the at least three two-dimensional microimages ~~and/or and~~ compensating distortion of said three-dimensional image by manipulating the aspectogram in accordance with a signal input from the detector.

2. (Previously Presented) The apparatus of claim 1, wherein the detector comprises a head tracking system which traces movement of the observer head in real time, and a head position detector for calculating the position of the observer head traced by the head tracking system.

3. (Previously Presented) The apparatus of claim 1, wherein the compensator comprises either a viewing adjust engine which adjusts the viewing zone of the three-dimensional image by moving the at least three microimages in accordance with a signal input from the head position detector, or a device which regenerates the at least three microimages of the scene in accordance with the signal input from the head position detector to compensate distortion of the three-dimensional image.

4. (Previously Presented) An apparatus for displaying a three-dimensional image, comprising:

an aspectogram comprising at least three two-dimensional microimages of a scene;

a microlens array for synthesizing the at least three two-dimensional microimages and regenerating them in a three-dimensional image of a scene;

a head tracking system for tracing movement of an observer head that observes the three-dimensional image, in real time;

a head position detector for calculating a position of the observer head traced by the head tracking system; and

a viewing adjust engine for adjusting a viewing zone of the three-dimensional image by moving the at least three microimages in accordance with a signal input from the head position detector.

5. (Previously Presented) The apparatus of claim 4, further comprising a device which regenerates the at least three microimages of the scene in accordance with the signal input from the head position detector to compensate distortion of the three-dimensional image.

6. (Previously Presented) The apparatus of claim 5, wherein the regenerated microimages are movable by the viewing adjust engine to form a new viewing zone centered relative to the moved observer head .

7. (Previously Presented) An apparatus for displaying a three-dimensional image, comprising:

an aspectogram comprising at least three two-dimensional microimages of a scene;

a microlens array for synthesizing the at least three two-dimensional microimages and regenerating them in a three-dimensional image of a scene;

a head tracking system for tracing movement of an observer head that observes the three-dimensional image, in real time;

a head position detector for calculating a position of the observer head traced by the head tracking system; and

a device for regenerating the at least three microimages of the scene in accordance with a signal input from the head position detector to compensate distortion of the three-dimensional image.

8. (Previously Presented) The apparatus of claim 7, further comprising a viewing adjust engine for adjusting a viewing zone of the three-dimensional image by moving the regenerated microimages of the scene to form a new viewing zone centered relative to the moved observer head, in accordance with a signal input from the head position detector and the device for regenerating the microimages.

9. (Currently Amended) A method for displaying a three-dimensional image of a scene, which is generated by synthesizing an aspectogram comprising at least three two-dimensional microimages of the scene and regenerating the at least three microimages as the three-dimensional image, the method comprising the steps of:

tracing movement of an observer head that observes the three-dimensional image;

calculating a position of the traced observer head; and

adjusting a viewing zone of the three-dimensional image ~~and/or~~ and compensating distortion of the three-dimensional image by manipulating the at least three microimages, in accordance with the calculated position of the observer head.

10. (Previously Presented) The method of claim 9, wherein adjusting the viewing zone of the three-dimensional image comprises forming a new viewing zone centered relative to the moved observer head by moving the at least three two-dimensional microimages of the scene.

11. (Previously Presented) The method of claim 9, wherein compensating distortion of the three-dimensional image comprises regenerating the at least three two-dimensional microimages of the scene.

12. (Currently Amended) A system for displaying a three-dimensional image of a scene that is generated via an aspectogram comprising at least three two-dimensional images of the scene, comprising:

a detector that detects a position of an observer relative to the three-dimensional scene and outputs a position signal; and

a compensator that manipulates the at least three two-dimensional images of the scene in accordance with the position signal by adjusting a viewing zone and compensating distortion of the three-dimensional image.

13. (Previously Presented) The system of claim 12, wherein the detector comprises a head tracking system.

14. (Previously Presented) The system of claim 12, wherein the compensator comprises a viewing adjust engine that adjusts a viewing zone of the three-dimensional image by moving the at least three two-dimensional images of the scene based on the position signal.

15. (Previously Presented) The system of claim 12, wherein the compensator comprises a device that compensates for distortion by regenerating the at least three two-dimensional images of the scene based on the position signal.

16. (Previously Presented) The system of claim 12, wherein the compensator comprises:

a viewing adjust engine that adjusts a viewing zone of the three-dimensional image by moving the at least three two-dimensional images of the scene based on the position signal;
and

a device that compensates for distortion by regenerating the at least three two-dimensional images of the scene based on the position signal.

17. (Previously Presented) The system of claim 12, wherein the detector detects the position of the observer by tracking the observer's head.

18. (Currently Amended) A method of manipulating a three-dimensional image of a scene that is generated via an aspectogram comprising at least three two-dimensional images of the scene, comprising:

determining a position of an observer of the three-dimensional image; and

manipulating the at least three two-dimensional images of the scene based on the determined position of the observer by adjusting a viewing zone and compensating distortion of the three-dimensional image.

19. (Previously Presented) The method of claim 18, wherein the position of the observer is determined by tracking the observer's head.

20. (Previously Presented) The method of claim 18, wherein the at least three two-dimensional images of the scene are moved based on the determined position of the observer so as to adjust a viewing zone of the three-dimensional image of the scene.

21. (Previously Presented) The method of claim 18, wherein the at least three two-

dimensional images of the scene are regenerated based on the determined position of the observer so as to compensate for distortion in the three-dimensional image of the scene.

22. (Previously Presented) The method of claim 18, wherein the at least three two-dimensional images of the scene are manipulated by:

regenerating the at least three two-dimensional images of the scene based on the determined position of the observer so as to compensate for distortion in the three-dimensional image of the scene; and

moving the at least three two-dimensional images of the scene based on the determined position of the observer so as to adjust a viewing zone of the three-dimensional image of the scene.